

# CCS COURSE MAP

## SUBJECT: ALGEBRA 1

**GRADE LEVEL** 8<sup>th</sup> GRADE  
**COURSE LENGTH** YEAR

**REVIEWED** 2018-2019

| Student Goals:                                    |   |   |  |  |  |
|---|---|---|--|--|--|
|   |   | I   | To glorify God, especially for His created order in mathematics.   |  |  |
|   |   | II  | To manipulate and evaluate basic algebraic expressions and to solve algebraic equations.   |  |  |
|   |   | III   | To apply arithmetic and algebraic skills to solve problems related to functions, radicals, equations, and statistics concepts.             |  |  |
| Student Outcomes:                                 |   |   |  |  |  |
|   |   | I   | The students will be able to develop thinking and reasoning skills, as well as problem-solving abilities.                                  |  |  |
|   |   | II  | The students will be able to expand on their sense of numbers to understand, perform operations, and solve problems with rational numbers. |  |  |
| UNIT/<br>WEEKS                                    | STANDARD  | OBJECTIVES  | ACTIVITIES/ASSESSMENT  | RESOURCES  | BIBLICAL<br>INTEGRATION  |
| 1.<br>Foundations<br>for Algebra<br><br>3-4 weeks | 8.1.1.1<br>8.1.1.2<br>8.1.1.4<br>8.2.3.1<br>8.2.3.2 | Students will be able to use properties of real numbers to add, subtract, multiply and divide and compare real numbers.<br><br>Students will be able to classify real numbers.<br><br>Students will be able to solve problems involving variables, algebraic expressions and equations.<br><br>Students will be able to use tables, | Classroom discussions/lecture/demonstration by teacher and students.<br><br>In-class work.<br><br>Homework<br><br>Quiz/test                | Pearson Algebra 1 © 2012<br><br>Chapter notes<br><br>Scientific calculator | Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics. |

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|                                     |         | equations and graphs to describe relationships.   |  |   |   |
| 2. Solving Equations<br><br>4 weeks | 8.2.4.2 | <p>Students will be able to solve one-step and multi-step equations.</p> <p>Students will be able to solve problems involving ratios, rates and conversions.</p> <p>Students will be able to solve and apply proportions.</p> <p>Students will be able to use proportions to solve problems involving similar figures.</p> <p>Students will be able to solve problems involving percent and percent change.</p> | <p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p> | <p>Pearson Algebra 1 © 2012</p> <p>Chapter notes</p> <p>Scientific calculator</p> | <p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p> |

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| <p>3. Solving Inequalities<br/>4 weeks</p>         | <p>8.2.4.4<br/>8.2.4.5<br/>8.2.4.5<br/>8.4.4.6</p> | <p>Students will be able to write, graph, and identify solutions of inequalities.</p> <p>Students will be able to solve one-step, multistep, compound, and absolute value inequalities.</p> <p>Students will be able to use set notation for solutions to inequalities.</p> <p>Students will be able to find subsets and find the union and intersection of sets.</p> | <p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p> | <p>Pearson Algebra 1 © 2012</p> <p>Chapter notes</p> <p>Scientific calculator</p> | <p>Students will be able to use mathematics as a tool to explore and manage God’s creation and to glorify God, especially for His created order in mathematics.</p> |
| <p>4. An Introduction to Functions<br/>3 weeks</p> | <p>8.2.1.1<br/>8.2.1.2<br/>8.2.1.3<br/>8.2.2.1</p> | <p>Students will be able to represent mathematical relationships using graphs.</p> <p>Students will be able to identify and represent patterns that describe linear and nonlinear functions.</p> <p>Students will be able</p>   | <p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p> | <p>Pearson Algebra 1 © 2012</p> <p>Chapter notes</p> <p>Scientific calculator</p> | <p>Students will be able to use mathematics as a tool to explore and manage God’s creation and to glorify God, especially for His created order in mathematics.</p> |

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|   |   | <p>to graph and write equations of functions.</p> <p>Students will be able to identify functions, find domain and range, and use function notation.</p>   |  |   |   |
| <p>5. Linear Functions</p> <p>4 weeks</p> | <p>8.2.2.1</p> <p>8.2.2.2</p> <p>8.2.4.3</p> <p>8.3.2.1</p> <p>8.3.2.3</p> <p>8.4.1.1</p> <p>8.4.1.2</p> <p>8.4.1.3</p> | <p>Students will be able to find rates of change and slope.</p> <p>Students will be able to write and graph equations of direct variation.</p> <p>Students will be able to write and graph linear equations using slope-intercept form, point-slope form, and standard form.</p> <p>Students will be able to determine whether lines are parallel, perpendicular or</p> | <p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p> | <p>Pearson Algebra 1 © 2012</p> <p>Chapter notes</p> <p>Scientific calculator</p> | <p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p> |

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|  |                            | <p>neither, and be able to write equations of parallel and perpendicular lines.</p> <p>Students will be able to use trend lines to write equations and make predictions.</p> <p>Students will be able to graph absolute value functions.</p> |  |   |   |
| <p>6. Systems of Equations and Inequalities</p> <p>3-4 weeks</p> | <p>8.2.4.7<br/>8.2.4.8</p> | <p>Students will be able to solve systems of equations using graphing, substitution, and elimination.</p> <p>Students will be able to solve systems of inequalities by graphing.</p>   | <p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p> | <p>Pearson Algebra 1 © 2012</p> <p>Chapter notes</p> <p>Scientific calculator</p> | <p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p> |

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| <p>7.<br/>Exponents<br/>and<br/>Exponential<br/>Functions</p> <p>3 weeks</p> | <p>8.2.1.5<br/>8.2.2.5<br/>8.2.3.1</p> | <p>Students will be able to simplify expressions involving positive, negative, zero, and rational exponents.</p> <p>Students will be able to multiply and divide powers with the same base and raise powers and quotients to a power.</p> <p>Students will be able to evaluate and graph exponential functions.</p> <p>Students will be able to write and use recursive formulas for geometric sequences.</p> | <p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p> | <p>Pearson Algebra 1<br/>© 2012</p> <p>Chapter notes</p> <p>Scientific calculator</p> | <p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p> |
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| <p>8.<br/>Polynomials<br/>and<br/>Factoring</p> <p>3-4 weeks</p>                 | <p>8.2.3.2</p>             | <p>Students will be able to classify, add, subtract, and multiply polynomials.</p> <p>Students will be able to factor binomials and trinomials.</p>   | <p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p> | <p>Pearson Algebra 1<br/>© 2012</p> <p>Chapter notes</p> <p>Scientific calculator</p> | <p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p> |
| <p>9.<br/>Quadratic<br/>Graphs and<br/>Their<br/>Properties</p> <p>3-4 weeks</p> | <p>9.2.1.5<br/>8.2.4.9</p> | <p>Students will be able to graph quadratic functions.</p> <p>Students will be able to solve quadratic equations by graphing, using square roots, factoring, completing the square, and using the quadratic formula.</p> <p>Students will be able to solve systems of linear and quadratic equations.</p> | <p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p> | <p>Pearson Algebra 1<br/>© 2012</p> <p>Chapter notes</p> <p>Scientific calculator</p> | <p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p> |

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| <p>10. Radical Expressions and Equations</p> <p>2-3 weeks</p> | <p>8.3.1.1<br/>9.2.4.7</p> | <p>Students will be able to identify right triangles and solve problems using the Pythagorean Theorem.</p> <p>Students will be able to simplify radicals and radical expressions.</p> <p>Students will be able to solve equations containing radicals.</p> <p>Students will be able to graph square root functions.</p> <p>Students will be able to find and use trigonometric functions.</p> | <p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p> | <p>Pearson Algebra 1 © 2012</p> <p>Chapter notes</p> <p>Scientific calculator</p> | <p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p> |
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